



Results:

Conclusions:



Exercise 1

Date:

1. Which pigment does plants need to be able to photosynthesise?

2. What do green plants produce during photosynthesis?

3. Give two reasons why photosynthesis is very important to humans and animals.

4. What do plants need to photosynthesise?

5. How do plants obtain the water required for photosynthesis?

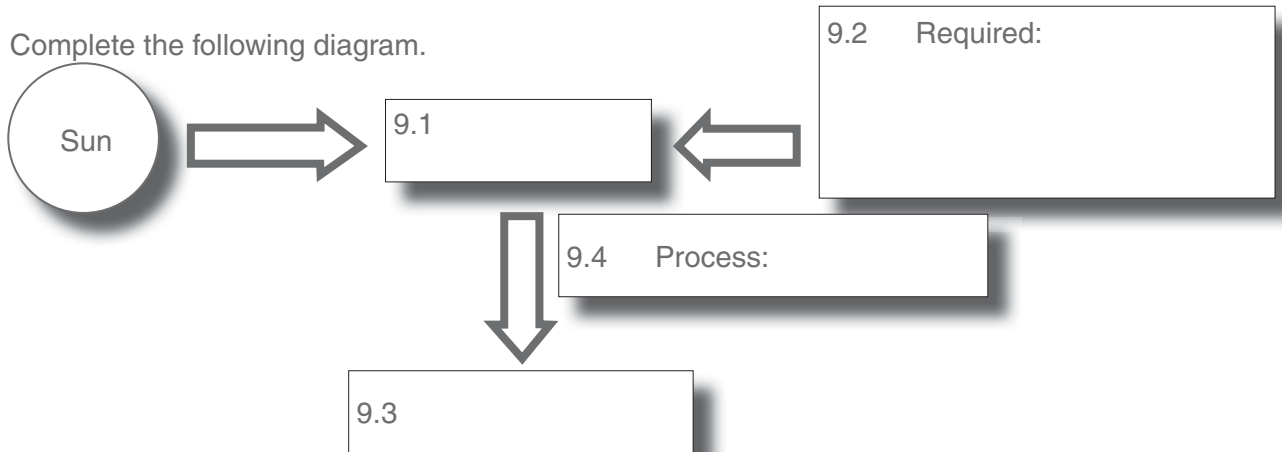
6. How do plants obtain the carbon dioxide required for photosynthesis?

7. How do plants release oxygen into the atmosphere?



8. Name two functions of plants in their natural environment, besides the production of food and oxygen. Give an example of each.

9 Complete the following diagram.



10 You will have to do some research to answer the following questions.

10.1 What is the difference between evergreen and deciduous trees?

10.2 Why do the leaves of some trees turn brown in the winter?

11. Write down the simplified chemical reaction for photosynthesis.

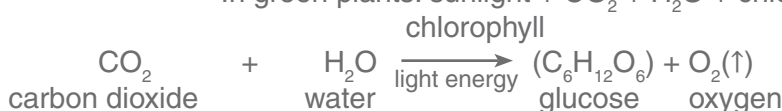


5. Tabulate three differences between photosynthesis and respiration.

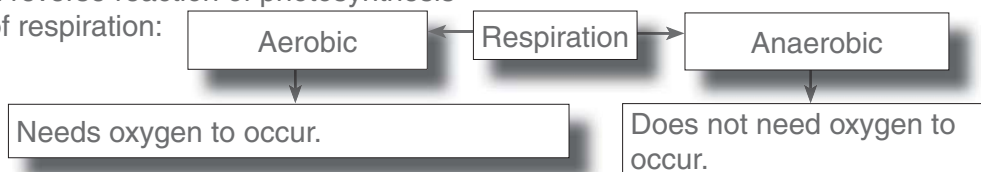
Photosynthesis	Respiration

Summary

- Plants are autotrophs – can produce own food.
- Photosynthesis: Green plants and some microorganisms
Use sunlight, water, CO₂.
Produce glucose (C₆H₁₂O₆) and O₂.
In green plants: sunlight + CO₂ + H₂O + chlorophyll → glucose + O₂(↑)



- Chlorophyll makes absorption of light energy possible.
- Gaseous exchange (absorption and emission of gases) occurs through the stomata on the parts of the plant above ground.
- Water in the soil is absorbed through the root hairs of the roots.
- Energy from glucose: Make life processes possible.
- Glucose: Stored as starch.
Stored starch → food source for other organisms.
- Respiration is the process whereby energy is released from food.
- The simplified chemical reaction for respiration:
glucose + O₂(↑) → energy + CO₂(↑) + H₂O
- Respiration: reverse reaction of photosynthesis
- Two types of respiration:



- The differences between photosynthesis and respiration:

Photosynthesis	Respiration
<ul style="list-style-type: none"> Only takes place in plants. Oxygen and sugar is formed during the process. Photosynthesis needs sunlight. Food is produced. Energy is stored. Only takes place in cells that contain chlorophyll. An anabolic (constructive) metabolic process 	<ul style="list-style-type: none"> Takes place in plants and animals. Water and carbon dioxide are formed during this process. Respiration does not need light. Food is broken down. Energy is released. Takes place in all living cells. A catabolic (destructive) metabolic process